(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 12 May 2005 (12.05.2005)

PCT

(10) International Publication Number WO 2005/043319 A3

(51) International Patent Classification7:

A61B 5/00

(21) International Application Number:

PCT/US2004/035024

(22) International Filing Date: 21 October 2004 (21.10.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

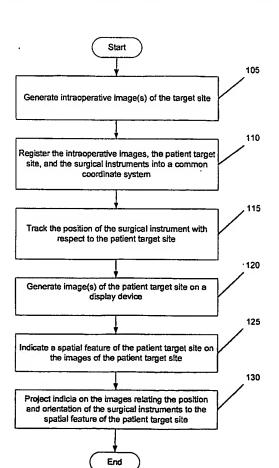
60/513,157 21 October 2003 (21.10.2003) US 10/764,650 26 January 2004 (26.01.2004) US 10/764,651 26 January 2004 (26.01.2004) US

(71) Applicant (for all designated States except US): THE BOARD OF TRUSTEES OF THE LELAND STAN-FORD JUNIOR UNIVERSITY [US/US]; Office of Technology Licensing, 1705 El Camino Real, Palo Alto, CA 94306-1106 (US).

- (71) Applicant and
- (72) Inventor: SHAHIDI, Ramin [IR/US]; 300 Pasteur Dr.MC:5327 (US).
- (74) Agent: STATTLER, JOHANSEN & ADELI; P.O. Box 51860, Palo Alto, CA 94303-0728 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR INTRAOPERATIVE TARGETING



(57) Abstract: The current process guides a medical instrument to a desired position in a patient, by acquiring one or more intraoperative images of the target site (105) and registering the intraoperative images, the patient target site and the surgical instruments into a common coordinate system (110).

INTERNATIONAL SEARCH REPORT

International application No.

	PCT/US04/35024	
A. CLASSIFICATION OF SUBJECT MATTER IPC(7): A61B 5/00 US CL: 600/424 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) U.S.: 600/424, 411, 414, 417, 426, 427, 429, 439; 606/130; 382/128, 131		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EAST DATABASE		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category * Citation of document, with indication, where ap	opropriate, of the relevant passages	Relevant to claim No.
A, P US 6,662,036 B2 (COSMAN) 09 December 2003 (0) surgical therapy instrument 43A guided to treat at the ultrasound 130 intraoperatively.	9.12.2003), see Figure 7, indicating a	1-26
Further documents are listed in the continuation of Box C.	See patent family annex.	
Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance.	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	
"E" exclier application or patent published on or after the international filing date	"X" document of particular relevance; the considered novel or cannot be conside when the document is taken alone	red to involve an inventive step
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means	"Y" document of particular relevance; the considered to involve an inventive step with one or more other such document obvious to a person skilled in the art	when the document is combined
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family	
Date of the actual completion of the international search	Date of mailing of the international search report	
03 October 2005 (03.10.2005) Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer Eloni Mantis Mercadel Telephone No. 703 308-0858	